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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,610	07/27/1999	AKIO KOBAYASHI	990864	5723

23850 7590 08/10/2004

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EXAMINER

VILLECCO, JOHN M

ART UNIT PAPER NUMBER

2612

DATE MAILED: 08/10/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/361,610

**Applicant(s)**

KOBAYASHI ET AL.

**Examiner**

John M. Villecco

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22, 23, 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 19-21 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 16.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION IV

### *Response to Arguments*

1. Applicant's arguments filed May 17, 2004 have been fully considered but they are not persuasive.
2. Regarding newly amended claims 19 and 25, applicant argues on pg. 15 of the response filed on May 17, 2004, that Shoda fails to disclose anything about performing twice exposure on the same row. However, the claims are not directed towards performing twice exposure on the same row. The claims are directed towards reading out first electric charges in a first exposure from first light-receiving elements using a first reading signal and reading out second electric charges in a second exposure from second light-receiving elements using a second reading signal. By using the terms first and second light-receiving elements the claims are directed towards two different light-receiving elements, not necessarily the light receiving elements of the same row. Therefore, the requirement by the applicant for Shoda to disclose performing a twice exposure on the same row does not have to be met. Shoda does, however, disclose performing a first exposure from first light-receiving elements using a first reading signal and reading out second electric charges in a second exposure from second light-receiving elements using a second reading signal.
3. Additionally, applicant argues that Shoda fails to teach reading out electric charges based on a second exposure to a vertical transfer register at the time that a vertical transfer of electric charges based on a first exposure is started or after such the vertical transfer is started. However, Shoda is not used to disclose this feature; Deguchi is used to disclose this feature.

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4. Furthermore, applicant argues that Deguchi fails to specifically disclose alternately arranging the first electric charges and the second electric charges on the vertical transfer register. Deguchi, however, is not used to disclose this feature. Shoda is used to disclose this feature.

5. Therefore, for the reasons stated above the rejections from the previous office action will be repeated with changes in the grounds of rejection to reflect the amendments filed on May 17, 2004.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 19-21 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoda et al. (U.S. Patent No. 6,429,898) in view of Deguchi et al. (U.S. Patent No. 5,463,421).**

8. Regarding **claim 19**, Shoda discloses an imager that produces image signals having a high dynamic range. The imager includes an imager (551) which includes a plurality of vertical transfer registers (12) with a plurality of transfer areas, a horizontal transfer register (14) connected to the vertical transfer registers, a plurality of pixels (10), and a timing generator (45). Shoda discloses a fifth embodiment which outputs odd and even rows and combines the signals from the odd and even rows to form a high dynamic range image signal. The timing generator

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(45) generates timing signals for the odd and even rows having different exposure times. Since the even and odd rows are being read out, the second readout of pixels is being transferred to a vacant transfer area in which no electric charge is present. The charges on the vertical transfer register are read out from the vertical transfer register (12) and then out of the horizontal transfer register (14). The second light receiving elements, in this case either the odd or even rows, are intermittently present in the vertical direction. Additionally, since the imager is reading out odd and even rows, the first and second electric charges are alternately arranged on the vertical transfer register. Shoda also discloses a series of circuits comprised of delays (552), adders (553), and lookup devices (555) for adding the signals from the odd and even lines to form a high dynamic range image signal for each of the pixels of the imager. See Figures 1 and 13, and column 10, line 38 to column 11, line 3.

Additionally, Shoda discloses the second light receiving elements equal the first light receiving elements (col. 6, line 34). However, Shoda fails to explicitly state that the second electric charge is read out at the same time or later than the vertical transfer of the first electric charge is started. However, Deguchi discloses that it is well known in the art to read out all of the even field or all of the odd field before reading the other field out. See Figure 1. If this were done in Shoda, the transfer of the second charge would be read out after the start of the transfer of the first electric charge. Since this is a well known of reading out an imager sensor, it would have been obvious to one of ordinary skill in the art to readout the imager of Shoda in a similar manner.

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9. As for *claim 20*, Deguchi discloses that all of the even or odd fields can be read out before, the other. Therefore, if the entire column of pixel elements were designated N, then the first pixel signals would move a distance N before the second signal is read out.

10. With regard to *claim 21*, Official Notice is taken as to the fact that it is well known in the art to use a monitor to display the images generated by an imager. This feature allows a user view an image that he/she has captured. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a monitor so a user can view the images they have captured.

11. *Claim 25* is considered substantively equivalent to claim 18. Please see the discussion of claim 18 above.

12. *Claim 26* is considered substantively equivalent to claim 20. Please see the discussion of claim 20 above.

13. *Claim 27* is considered substantively equivalent to claim 21. Please see the discussion of claim 21 above.

***Allowable Subject Matter***

14. **Claims 22, 23, 28, and 29 are allowed.**

15. The following is an examiner's statement of reasons for allowance:

Regarding *claims 22 and 28*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest a third exposure and a fourth exposure performed using a shutter member arranged in front of the imager in a manner as discussed in the claims.

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16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (For either formal or informal communications intended for entry. For informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco

August 2, 2004



AUNG MOE  
PRIMARY EXAMINER